



**SOLFAC 050 EW (Cyfluthrin 5% w/w EW)**

Version 1 / IND  
102000028657

1/11  
Revision Date: 16.10.2017  
Print Date: 16.10.2017

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**1.1 Product identifier**

**Trade name** SOLFAC EW 050  
**Product code (UVP)** 81701148

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Use** Insecticide

**1.3 Details of the supplier of the safety data sheet**

**Supplier** Bayer CropScience Limited  
Bayer House, Central Avenue  
Hiranandani Estate  
400607 Thane (W)  
Maharashtra  
India

**Telephone** +91-22-25311030 / 25311234

**Telefax** +91-22-25455116

**1.4 Emergency telephone no.**

**Indian Emergency Number** 022-25311885 (24 hours/day)

**Global Incident Response Hotline (24h)** +1 (760) 476-3964 (Company 3E for Bayer AG, Crop Science Division)

**SECTION 2: HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**

**Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.**

Skin sensitisation: Category 1  
H317 May cause an allergic skin reaction.

Acute aquatic toxicity: Category 1  
H400 Very toxic to aquatic life.

Chronic aquatic toxicity: Category 1  
H410 Very toxic to aquatic life with long lasting effects.

**2.2 Label elements**

**Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.**

Hazard label for supply/use required.

**Hazardous components which must be listed on the label:**

- Cyfluthrin



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**Signal word:** Warning

**Hazard statements**

- H317 May cause an allergic skin reaction.
- H410 Very toxic to aquatic life with long lasting effects.
- EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

**Precautionary statements**

- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
- P501 Dispose of contents/container in accordance with local regulation.

**2.3 Other hazards**

Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**3.2 Mixtures**

**Chemical nature**

Emulsion, oil in water (EW)  
Cyfluthrin 50 g/l

**Hazardous components**

Hazard statements according to Regulation (EC) No. 1272/2008

| Name   | CAS-No. /<br>EC-No. /<br>REACH Reg. No. | Classification   | Conc. [%]  |
|--|---|--|------------|
|  |   | REGULATION (EC) No<br>1272/2008  |            |
| Cyfluthrin                                     | 68359-37-5                              | Acute Tox. 2, H300<br>Acute Tox. 2, H330<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410             | 5          |
| Solvent Naphtha<br>(petroleum), light aromatic | 64742-95-6<br>01-2119486773-24-xxxx     | Flam. Liq. 3, H226<br>STOT SE 3, H336<br>STOT SE 3, H335<br>Asp. Tox. 1, H304<br>Aquatic Chronic 2, H411 | > 1 – < 10 |

**Further information**

|            |            |  |
|------------|------------|--|
| Cyfluthrin | 68359-37-5 | M-Factor: 1,000 (acute), 1,000 (chronic) |
|------------|------------|--|

For the full text of the H-Statements mentioned in this Section, see Section 16.



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**SECTION 4: FIRST AID MEASURES**

**4.1 Description of first aid measures**

- General advice** Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.
- Inhalation** Move to fresh air in case of accidental inhalation of vapours or decomposition products. Oxygen or artificial respiration if needed. Call a physician or poison control center immediately.
- Skin contact** Immediately wash with plenty of soap and water for at least 15 minutes. Warm water may increase the subjective severity of the irritation/paresthesia. This is not a sign of systemic poisoning. In case of skin irritation, application of oils or lotions containing vitamin E may be considered. If symptoms persist, call a physician.
- Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Warm water may increase the subjective severity of the irritation/paresthesia. This is not a sign of systemic poisoning. Apply soothing eye drops, if needed anaesthetic eye drops. Get medical attention if irritation develops and persists.
- Ingestion** Do NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth.

**4.2 Most important symptoms and effects, both acute and delayed**

- Symptoms** Local: Skin and eye paraesthesia which may be severe, Usually transient with resolution within 24 hours, Skin, eye and mucous membrane irritation, Cough, Sneezing
- Systemic: discomfort in the chest, Tachycardia, Hypotension, Nausea, Abdominal pain, Diarrhoea, Vomiting, Blurred vision, Headache, Anorexia, Somnolence, Coma, Convulsions, Tremors, Prostration, Airway hyperreaction, Pulmonary oedema, Palpitation, Muscular fasciculation, Apathy, Dizziness

**4.3 Indication of any immediate medical attention and special treatment needed**

- Risks** This product contains a pyrethroid. Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.
- Treatment** Systemic treatment: Initial treatment: symptomatic. Monitor: respiratory and cardiac functions. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Keep respiratory tract clear. Oxygen or artificial respiration if needed. In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. If not effective, phenobarbital may be used. Contraindication: atropine. Contraindication: derivatives of adrenaline. There is no specific antidote. Recovery is spontaneous and without sequelae.
- In case of skin irritation, application of oils or lotions containing vitamin E may be considered.



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**SECTION 5: FIREFIGHTING MEASURES**

**5.1 Extinguishing media**

**Suitable** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable** High volume water jet

**Hazchem Code** 3Z

**5.2 Special hazards arising from the substance or mixture** In the event of fire the following may be released: Hydrogen chloride (HCl), Hydrogen cyanide (hydrocyanic acid), Hydrogen fluoride, Carbon monoxide (CO), Nitrogen oxides (NO<sub>x</sub>)

**5.3 Advice for firefighters**

**Special protective equipment for firefighters** In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

**Further information** Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

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**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

**Precautions** Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.

**6.2 Environmental precautions** Do not allow to get into surface water, drains and ground water.

**6.3 Methods and materials for containment and cleaning up**

**Methods for cleaning up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections** Information regarding safe handling, see section 7.  
Information regarding personal protective equipment, see section 8.  
Information regarding waste disposal, see section 13.

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**SECTION 7: HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

**Advice on safe handling** Use only in area provided with appropriate exhaust ventilation.

**Advice on protection against fire and explosion** No special precautions required.

**Hygiene measures** Avoid contact with skin, eyes and clothing. Keep working clothes

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separately. Wash hands before breaks and immediately after handling the product. Shower or bathe at the end of working. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

**7.2 Conditions for safe storage, including any incompatibilities**

**Requirements for storage areas and containers** Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Protect from freezing. Keep away from direct sunlight.

**Advice on common storage** Keep away from food, drink and animal feedingstuffs.

**Suitable materials** Coex EVOH (1000L IBC)

**7.3 Specific end use(s)** Refer to the label and/or leaflet.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters**

| Components | CAS-No.    | Control parameters              | Update | Basis    |
|------------|------------|---------------------------------|--------|----------|
| Cyfluthrin | 68359-37-5 | 0.01 mg/m <sup>3</sup><br>(TWA) |        | OES BCS* |

\*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

**8.2 Exposure controls****Personal protective equipment**

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

**Respiratory protection**

Respiratory protection is not required under anticipated circumstances of exposure.

Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

**Hand protection**

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

|                      |  |
|----------------------|--|
| Material             | Nitrile rubber                           |
| Rate of permeability | > 480 min                                |
| Glove thickness      | > 0.4 mm                                 |
| Protective index     | Class 6                                  |
| Directive            | Protective gloves complying with EN 374. |

**Eye protection**

Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

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|------------------------------------|---|
| <b>Skin and body protection</b>    | Wear standard coveralls and Category 3 Type 4 suit.<br>If there is a risk of significant exposure, consider a higher protective type suit.<br>Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.<br>If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer. |
| <b>General protective measures</b> | If product is handled while not enclosed, and if contact may occur:<br>Complete suit protecting against chemicals   |

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

|   |  |
|---|--|
| <b>Form</b>                                   | Liquid   |
| <b>Colour</b>                                 | white to light beige   |
| <b>Odour</b>                                  | aromatic   |
| <b>pH</b>                                     | 2.5 - 3.5 at 100 % (23 °C)                                   |
| <b>Freezing temperature</b>                   | -1 °C  |
| <b>Boiling point/boiling range</b>            | ca. 100 °C   |
| <b>Flash point</b>                            | Not relevant; aqueous solution                               |
| <b>Ignition temperature</b>                   | > 600 °C   |
| <b>Vapour pressure</b>                        | 27 hPa at 20 °C<br>134 hPa at 50 °C<br>170 hPa at 55 °C      |
| <b>Density</b>                                | ca. 1.01 g/cm <sup>3</sup> at 20 °C                          |
| <b>Water solubility</b>                       | emulsifiable   |
| <b>Partition coefficient: n-octanol/water</b> | Cyfluthrin: log Pow: 5.9 - 6.0 at 20 °C                      |
| <b>Viscosity, kinematic</b>                   | 19.1 mm <sup>2</sup> /s at 20 °C                             |
| <b>Surface tension</b>                        | 51 mN/m at 40 °C   |
| <b>Oxidizing properties</b>                   | No oxidizing properties                                      |
| <b>Explosivity</b>                            | Not explosive  |
| <b>9.2 Other information</b>                  | Further safety related physical-chemical data are not known. |



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**SECTION 10: STABILITY AND REACTIVITY**

**10.1 Reactivity**

**Thermal decomposition** Stable under normal conditions.

**10.2 Chemical stability** Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions** No hazardous reactions when stored and handled according to prescribed instructions.

**10.4 Conditions to avoid** Extremes of temperature and direct sunlight.

**10.5 Incompatible materials** Store only in the original container.

**10.6 Hazardous decomposition products** No decomposition products expected under normal conditions of use.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

**Acute oral toxicity** LD50 (Rat) 2,113 mg/kg

**Acute inhalation toxicity** LC50 (Rat) > 7.576 mg/l  
Exposure time: 4 h  
Determined in the form of a respirable aerosol.  
Highest attainable concentration.

**Acute dermal toxicity** LD50 (Rat) > 5,000 mg/kg

**Skin irritation** Slight irritant effect - does not require labelling. (Rabbit)

**Eye irritation** Slight irritant effect - does not require labelling. (Rabbit)

**Sensitisation** Sensitising (Mouse)  
OECD Test Guideline 429, local lymph node assay (LLNA)

**Assessment STOT Specific target organ toxicity – single exposure**

Cyfluthrin: Based on available data, the classification criteria are not met.

**Assessment STOT Specific target organ toxicity – repeated exposure**

The toxic effects of Cyfluthrin are related to transient hyperactivity typical for pyrethroid neurotoxicity.

**Assessment mutagenicity**

Cyfluthrin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

**Assessment carcinogenicity**

Cyfluthrin was not carcinogenic in lifetime feeding studies in rats and mice.

**Assessment toxicity to reproduction**

Cyfluthrin caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Cyfluthrin is related to parental toxicity.

**Assessment developmental toxicity**

Cyfluthrin caused developmental toxicity only at dose levels toxic to the dams. The developmental



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effects seen with Cyfluthrin are related to maternal toxicity.

**Further information**

No further toxicological information is available.

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**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Toxicity**

**Toxicity to aquatic invertebrates** EC50 (Daphnia magna (Water flea)) 0.00016 mg/l  
Exposure time: 48 h  
The value mentioned relates to the active ingredient.

**Toxicity to aquatic plants** IC50 (Desmodesmus subspicatus (green algae)) > 10 mg/l  
Growth rate; Exposure time: 72 h  
The value mentioned relates to the active ingredient.  
No acute toxicity was observed at its limit of water solubility.

**12.2 Persistence and degradability**

**Biodegradability** Cyfluthrin:  
Not rapidly biodegradable

**Koc** Cyfluthrin: Koc: 64300

**12.3 Bioaccumulative potential**

**Bioaccumulation** Cyfluthrin: Bioconcentration factor (BCF) 506  
Does not bioaccumulate.

**12.4 Mobility in soil**

**Mobility in soil** Cyfluthrin: Immobile in soil

**12.5 Results of PBT and vPvB assessment**

**PBT and vPvB assessment** Cyfluthrin: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

**12.6 Other adverse effects**

**Additional ecological information** No other effects to be mentioned.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

**Product** In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant.

**Contaminated packaging** Not completely emptied packagings should be disposed of as hazardous waste.

**Legal basis**





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**Waste key in accordance with Schedule I of the Hazardous Waste Rules, 2008 as amended (India - EP Act):**

- 29.1 Process wastes/residues
- 29.3 Date-expired and off-specification pesticides

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**SECTION 14: TRANSPORT INFORMATION**

**ADR/RID/ADN**

|                                 |   |
|---------------------------------|---|
| 14.1 UN number                  | <b>3082</b>   |
| 14.2 Proper shipping name       | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CYFLUTHRIN SOLUTION) |
| 14.3 Transport hazard class(es) | 9   |
| 14.4 Packing group              | III   |
| 14.5 Environm. Hazardous Mark   | YES   |
| Hazard no.                      | 90  |
| Hazchem Code                    | 3Z  |

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

**IMDG**

|                                 |   |
|---------------------------------|---|
| 14.1 UN number                  | <b>3082</b>   |
| 14.2 Proper shipping name       | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CYFLUTHRIN SOLUTION) |
| 14.3 Transport hazard class(es) | 9   |
| 14.4 Packing group              | III   |
| 14.5 Marine pollutant           | YES   |

**IATA**

|                                 |  |
|---------------------------------|--|
| 14.1 UN number                  | <b>3082</b>  |
| 14.2 Proper shipping name       | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CYFLUTHRIN SOLUTION ) |
| 14.3 Transport hazard class(es) | 9  |
| 14.4 Packing group              | III  |
| 14.5 Environm. Hazardous Mark   | YES  |

**14.6 Special precautions for user**

See sections 6 to 8 of this Safety Data Sheet.

**14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code**

No transport in bulk according to the IBC Code.

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**SECTION 15: REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**



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WHO-classification: III (Slightly hazardous)

**Labeling according to Insecticide Rules 1971 as amended. (INDIA)**



Class II: Highly toxic  
Colour: bright yellow  
Poison!  
Keep out of the reach of children.

**SECTION 16: OTHER INFORMATION**

**Text of the hazard statements mentioned in Section 3**

|      |   |
|------|---|
| H226 | Flammable liquid and vapour.                          |
| H300 | Fatal if swallowed.                                   |
| H304 | May be fatal if swallowed and enters airways.         |
| H330 | Fatal if inhaled.                                     |
| H335 | May cause respiratory irritation.                     |
| H336 | May cause drowsiness or dizziness.                    |
| H400 | Very toxic to aquatic life.                           |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects.      |

**Abbreviations and acronyms**

|           |  |
|-----------|--|
| ADN       | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways                |
| ADR       | European Agreement concerning the International Carriage of Dangerous Goods by Road                            |
| ATE       | Acute toxicity estimate  |
| CAS-Nr.   | Chemical Abstracts Service number  |
| Conc.     | Concentration  |
| EC-No.    | European community number  |
| ECx       | Effective concentration to x %   |
| EINECS    | European inventory of existing commercial substances   |
| ELINCS    | European list of notified chemical substances  |
| EN        | European Standard  |
| EU        | European Union   |
| IATA      | International Air Transport Association  |
| IBC       | International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) |
| ICx       | Inhibition concentration to x %  |
| IMDG      | International Maritime Dangerous Goods   |
| LCx       | Lethal concentration to x %  |
| LDx       | Lethal dose to x %   |
| LOEC/LOEL | Lowest observed effect concentration/level   |
| MARPOL    | MARPOL: International Convention for the prevention of marine pollution from ships                             |
| N.O.S.    | Not otherwise specified  |
| NOEC/NOEL | No observed effect concentration/level   |
| OECD      | Organization for Economic Co-operation and Development   |
| RID       | Regulations concerning the International Carriage of Dangerous Goods by Rail                                   |
| TWA       | Time weighted average  |



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UN United Nations  
WHO World health organisation

The information contained within this Safety Data Sheet is in accordance with the guidelines established by Regulation (EU) 1907/2006 and Regulation (EU) 2015/830 amending Regulation (EU) No 1907/2006 and any subsequent amendments. This data sheet complements the user's instructions, but does not replace them. The information it contains is based on the knowledge available about the product concerned at the time it was compiled. Users are further reminded of the possible risks of using a product for purposes other than those for which it was intended. The required information complies with current EEC legislation. Addressees are requested to observe any additional national requirements.

**Reason for Revision:** The following sections have been revised: Section 4: First Aid Measures. Section 7: Handling and Storage. Section 8: Exposure Controls / Personal Protection. Section 11: Toxicological information on STOT (Specific Target Organ Toxicity) and CMR (Carcinogenic, Mutagenic and toxic to Reproduction).

Changes since the last version are highlighted in the margin. This version replaces all previous versions.